79-28-5-35/69

Complex
Synthesis of Some/Esters of the 4,4' Dioxydiphenylsulfone and of Carboxylic Acids

sulfone, 2 parts acid), the mixture was heated in the flask to 120 - 140°C and into this the calculated amount of phosphoroxychloride was added in drops. The whole was heated to the complete removal of hydrogen chloride, then cooled and treated with 5% soda solution; the organic and inorganic acids, as well as the above-mentioned sulfone which did not enter reaction, were removed. The final product, the ester, was recrystallized. Furthermore the ester of the α bromisovalerianic acid and of the dioxydiphenylsulfone were obtained on heating the bromoanhydride of the same acid with the sodium salt of the dioxydiphenylsulfone. All synthetized esters are white or light yellow powdery products; they are difficult to dissolve in water and easily soluble in alcohol, acetone and dioxane. They hydrolize on heating with 10% alkali solution. The properties of the 14 synthetized esters are mentioned in a table. There are 1 table and 4 references.

Card 2/3

79-28-5-35/69

Synthesis of Some Complex Esters of the 4,4'-Dioxydiphenylsulfone and of Carboxylic Acids

1 of which is Soviet.

ASSOCIATION: L'vovskiy meditsinskiy institut (L'vov Medical Institute)

SUBMITTED: March 27, 1957

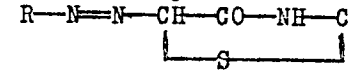
Card 3/3

5(3), 17(12)

AUTHORS: Grishchuk, A. P., Baranov, S. N. SOV/79-29-5-55/75

TITLE: Synthesis and Transformations of Some Thiazolidine Derivatives (Sintez i prevrashcheniya nekotorykh proizvodnykh tiazolidina). 2. Production of Azorhodanines (2. Polucheniye azorodaninov)

PERIODICAL: Zhurnal obshchey khimii, 1959, Vol 29, Nr 5, pp 1665-1667 (USSR)

ABSTRACT: 7 new azorhodanines were prepared. Azorhodanines have the general formula  . Since

physiological effects were expected of the products, drugs such as anesthesin, sulfanilamide, etazol, sulfidine, atoxyl, sulfazyl and p-aminobenzoic acid were used as radical R. A table presents formula, yield, melting point and nitrogen content. The azorhodanines are intensively colored and have acid properties. The formation of 5-(4-carboxy-phenyl-azo)--rhodanine and 5-(4-carbethoxy-phenyl-azo)-rhodanine is described in detail. They are synthesized like the others in ammoniacal media. The bactericidal properties of the compounds obtained were investigated on Kafedra mikrobiologii L'vovskogo

Card 1/2

Synthesis and Transformations of Some Thiazolidine Derivatives. 2. Production of Azorhodanines SOV/79-29-5-55/75

meditsinskogo instituta (Chair of Microbiology L'vov Medical Institute) by S. M. Kapustyak . The compounds obtained proved to be inactive against staphylococcus (albus and aureus), dysenteria-, diphtheria-, typhoid fever, tuberclebacillus and capsulated microbes. There are 1 table and 12 references, 7 of which are Soviet.

ASSOCIATION: L'vovskiy meditsinskiy institut (L'vov Medical Institute)

SUBMITTED: March 15, 1958

Card 2/2

BARANOV, S.N.; TARNAVSKAYA, N.Ye.

Reactions of α-thioketo acids with o-diamines. Part 3: Synthesis of pteridines from 4,5-diaminopyrimidines and aromatic α-thio acids. Ukr. khim. zhur. 26 no.5:626-632 '60. (MIRA 13:11)

1. L'vovskiy meditsinskiy institut, kafedra organicheskoy khimii.
(Pteridine) (Pyrimidine)

5.3610

77669
SOV/80-33-2-44/52

AUTHORS: Grishchuk, A. P., Baranov, S. N.

TITLE: Brief Communications. Concerning the Synthesis of β-Chloropropionic Acid

PERIODICAL: Zhurnal prikladnoy khimii, 1960, Vol 33, Nr 2, pp 487-489 (USSR)

ABSTRACT: A new simple method for the preparation of β-chloropropionic acid is suggested. Acrylonitrile was heated with conc HCl (ratio 1:2), and β-chloropropionic acid was formed.

$$H_2C{=}CH{-}CN + 2HCl + 2H_2O \rightarrow \underset{Cl}{CH_2{-}CH_2{-}COOH} + NH_4Cl$$

The best results were obtained under the following conditions: 0.4 mole of technical acrylonitrile was dissolved in 1.6 mole of 35% HCl (sp gr 1.18) and gently boiled for 1 hour; after distillation

Card 1/2

Brief Communications. Concerning the Synthesis of β-Chloropropionic Acid

at 105-106°/19 mm, β-chloropropionic acid was obtained in 69% yield. Continuous heating and the use of dry HCl decreases the yield to 62%. There are 2 tables; and 8 references, 3 Soviet, 4 German, 1 U.S. The U.S. reference is: W. Jacobs, M. Heidelberger, J. Am. Chem. Soc., 39, 1465 (1917).

ASSOCIATION: L'vov' Medical Institute (L'vovskiy meditsinskiy institut)

SUBMITTED: August 27, 1958

Card 2/2

BARANOV, S.N.

Reactivity of the hydrogen atoms of the methylene group in certain azolidines. Zhur. ob. khim. 31 no. 2:512-515 F '61.
(MIRA 14:2)

1. L'vovskiy meditsinskiy institut.
(Methylene group) (Hydrogen)

GRISHCHUK, A.P.; BARANOV, S.N.

Synthesis of B-halopropionic acids. Zhur.ob.khim. 31 no.7: 2396-2398 Jl '61. (MIRA 14:7)

1. L'vovskiy meditsinskiy institut.
(Propionic acid)

BARANOV, S.N.; GORIZDRA, T.Ye.

Synthesis of pteridines from 4,5-diaminopyrimidines and aromatic α-keto acids. Part 3: Synthesis of some thiopteridines. Zhur.-ob.khim. 32 no.4:1220-1226 Ap '62. (MIRA 15:4)

1. L'vovskiy meditsinskiy institut.
(Pteridine) (Pyrimidine) (Acids, Organic)

BARANOV, S.N.; GORIZDRA, T.Ye.

Synthesis of pteridines from 4,5-diaminopyrimidines and aromatic α-keto acids. Part 4: Alkylation of some thiopteridines. Zhur.-ob.khim. 32 no.4:1226-1230 Ap '62. (MIRA 15:4)

1. L'vovskiy meditsinskiy institut.
(Pteridine) (Alkylation)

BARANOV, S.N.

Reactivity of hydrogen atoms of the methylene group of some azolidones. Part 2: Absorption spectra and mobility of hydrogen atoms in the methylene group of azolidones. Zhur.ob.khim. 32 no.4:1230-1235 Ap '62. (MIRA 15:4)

1. L'vovskiy meditsinskiy institut.
(Pyrrilidinone)

BARANOV, S.N.; GRISHCHUK, A.P.

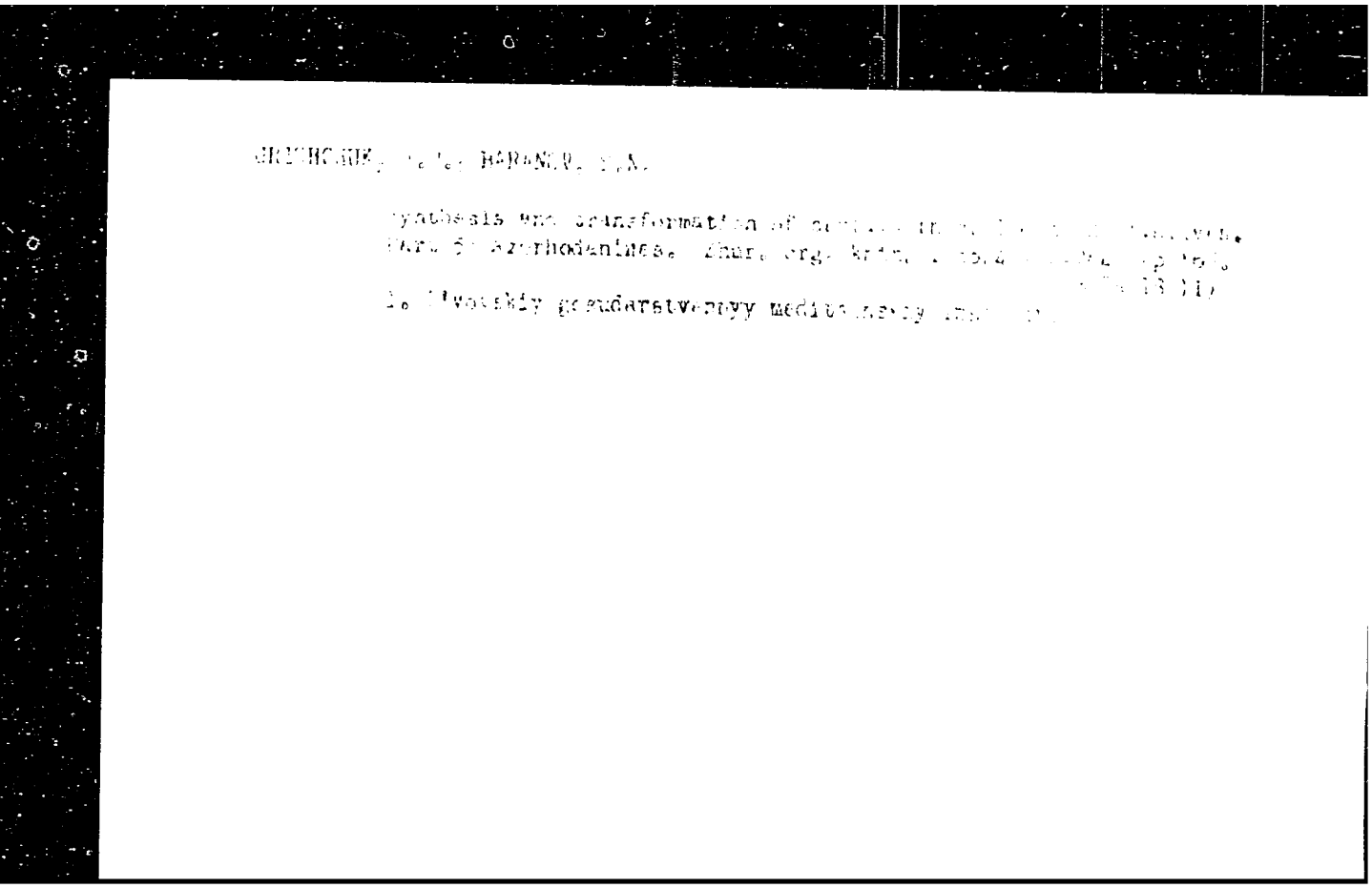
Spectral study of azo-4-thiazolidinones. Part 4. Zhur.ob.khim. 32 no.6 1938-1941 Je '62. (MIRA 15:6)

1. L'vovskiy meditsinskiy institut.
(Thiazolidinone)

BARANOV, S.N.; PLEVACHUK-TARNAVSKAYA, N.Ye.

Interaction of α-thioketo acids with o-diamines. Part 3: Interaction of 2-methyl-3-hydroxy- and 2-benzyl-3-hydroxyquinoxalines with diazonium salts. Ukr.khim.zhur. 29 no.1:82-87 '63. (MIRA 16:5)

1. L'vovskiy meditsinskiy institut.
(Quinoxaline) (Diazonium compounds)



BARANOV, S.P., inzh.

Conference on the generalization of experience in the operation of 100K gas motor compressors with evaporational cooling systems. Energomashinostroenie 11 no.10:45-46 O '65. (MIRA 18:11)

L 32953-66 EWT(1)/EWT(m)/EWP(t)/ETI IJP(c) JD/JG

ACC NR: AP6015742 SOURCE CODE: UR/0073/66/032/005/0494/0502

AUTHOR: Babko, A. K.; Baranov, S. P.; Titkov, Yu. B.

ORG: Institute of General and Inorganic Chemistry AN UkrSSR (Institut obshchey i neorganicheskoy khimii AN UkrSSR)

TITLE: Sensitivity of luminescent analysis and quantum luminescence yield for hydroxyquinolinates of aluminum, gallium and indium

SOURCE: Ukrainskiy khimicheskiy zhurnal, v. 32, no. 5, 1966, 494-502

TOPIC TAGS: luminescence, aluminum compound, gallium compound, indium compound, quantum yield, chloroform

ABSTRACT: An objective criterion is proposed for evaluating the sensitivity of the luminescent analysis method: $K=\varepsilon Q$ where ε is the molar coefficient of luminous absorption and Q is the quantum yield. A method is proposed for determining the quantum luminescence yield based on comparison (under identical conditions of instrument sensitivity) of the intensity of luminescence from the given material with that of another material for which the exact quantum yield is known. The proposed criterion and method for measuring the quantum yield are tested by determining the absorption and luminescence spectra of chloroform solutions of aluminum, gallium and indium hydroxyquinolinates. The effect of excess hydroxyquinoline on the luminescence intensity of the

Card 1/2 UDC: 543.535.37

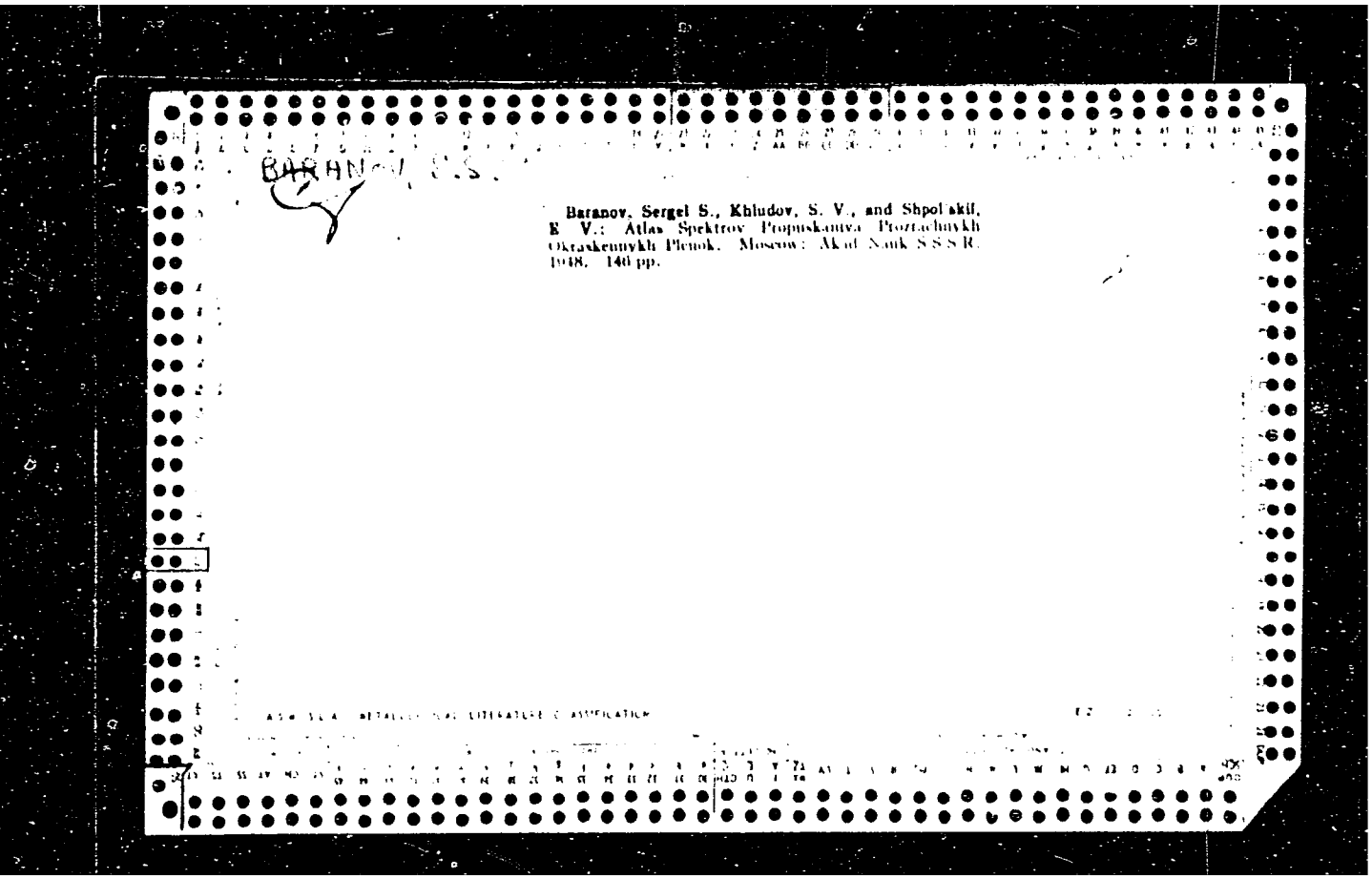
L 32953-66

ACC NR: AP6015742

chloroform extracts of the hydroxyquinolinates is studied and the molar coefficients of light absorption are calculated together with the quantum luminescence yields for all specimens. It is found that an excess of hydroxyquinoline reduces the intensity of luminescence excited by radiation corresponding to the 365 mμ line in the mercury spectrum, since hydroxyquinoline partially absorbs the stimulating emission in the region. The experimental data show that the product εQ is an excellent criterion for judging the sensitivity of the luminescent analysis method. Orig. art. has: 4 figures, 2 tables, 10 formulas.

SUB CODE: 20/ SUBM DATE: 25Jan65/ ORIG REF: 008/ OTH REF: 012

Card 2/2



Baranov, Sergei S., Khludov, S. V., and Shpolskii, E. V.: Atlas Spektrov Propuskaniya Prozrachnykh Okraskennykh Plenok. Moscow: Akad Nauk S.S.S.R. 1948. 140 pp.

BARANOV, S. S. Cand. Tech. Sci.

Dissertation: "Photographic Methods for Investigation of Absorption Laws in the Ultraviolet Region of the Spectrum." All-Union Sci Res Inst of Mineral Raw Materials, 15 Oct 47.

SO: Vechernyaya Moskva, Oct, 1947 (Project #17836)

BARANOV, S.V.

Concerning the revision of negatives. Geod. i kart. no.11:55-57 N '64. (MIRA 18:2)

L 5019-66 EWT(m)/EWP(t)/EWP(k)/EWP(b)/EWA(c) JD/HW

ACC NR: AP5022041 SOURCE CODE: UR/0286/65/000/014/0113/0113

AUTHORS: Paton, B. Ye.; Dudko, D. A.; Medovar, B. I.; Khrundzho, V. M.; Lutsyuk-Khudin, V. A.; Sayenko, V. Ya.; Dryapik, Ye. P.; Shekhter, S. Ya.; Salov, Ye. M.; Baranov, S. V.

ORG: none

TITLE: A method for obtaining two-layer rolling. Class 49, No. 173115 [Institute of Electric Welding im. Ye. O. Paton, AN UkrSSR (Institut elektrosvarki AN UkrSSR)]

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 14, 1965, 113

TOPIC TAGS: metal rolling, metal cladding, metal industry

ABSTRACT: This Author Certificate presents a method for obtaining two-layer rolling by lining a plate ingot with a solid plate. To produce proper adhesion between the layers, the plate ingot is lined with a plate of cladding metal to which is welded a plate of metal analogous in composition to the one being lined.

SUB CODE: IE, MM/ SUBM DATE: 04Jul63/ ORIG REF: 000/ OTH REF: 000

Card 1/1

0701 0723 UDC: 621.771.8

BARANOV, S.Ya., inzh.

Stalingrad petroleum workers eliminate cuases of accidents. Bezop. truda v prom. 5 no.3:28-29 Mr '61. (MIRA 14:3)

1. Upravleniye neftyanoy i gazovoy promyshlennosti Stalingradskogo sovnarkhoza.
(Stalingrad Province—Oil fields—Safety measures)

BOLKOV, S.Ye.

1. Nachalnik sluzhby puti [illegible] Rekonstruktivnogo Rekonstruktivnogo zavoda.

LOSHKAREV, B.A., kand.tekhn.nauk; SYCHEVA, N.A., inzh.; BARANOV, T.F., inzh.

Conditions for the compaction of briquetted [illegible] on the basis of materials of the system $ZnO - TiO_2$. Ogneup. 29 no.6:264-270 '64. (MIRA 17:8)

1. Ural'skiy politekhnicheskiy institut imeni [illegible].

IGNATOV, N.N.; BARANOV, T.M.

New developments in the manufacture of quality glassware.
Leg.prom. 15 no.6:35-36 Je '55. (MLRA 8:8)
(Glass manufacture)

IGNATOV, N.N.; BARANOV, T.M.

Efficient method for finishing operations on glassware rims.
Leg.prom. 15 no.12:43-44 D '55. (MLRA 9:5)
(Glassware)

15

1661. Elliptical glass-pots.—N. N. IGNATOV and T. M. BARANOV (*Glass & Ceramics*, Moscow, 13, No. 2, 26, 1956). In Russian. A brief note. The usual Russian glass-pot furnace accommodates 14 circular pots each with a capacity of 160 l. In 1948, 10 of these pots were replaced by 250-l. elliptical pots, the longer axis towards the centre of the furnace, the small axis not exceeding the diameter of the previous circular pots. The output was increased. (2 figs.)

PANICHKIN, S.Ye.; IGNATOV, N.N.; BARANOV, T.M.

New developments in the processing of fine tableware. Stek.i ker. 13 no.6:24-25 Je '56. (MLRA 9:8)
(Grinding and polishing) (Pottery)

PAR'KOV, P. V.,

Medical Instruments

"Lubrication and Packing of Medical Equipment," Med. Prom., [illegible], No. 2, 1948. Mar., All-Union Sci. Res. Inst., for Medical Instruments and Equipment, -cl948-.

BARANOV, V.

We shall live under communism. Okhr. truda i sots. strakh. 4 no.10:10-11 '61. (MIRA 14:12)

1. Predsedatel' tsekhkoma tsekha srednikh mashin zavoda "Elektrosila" imeni Kirova.
(Leningrad--Electric machinery industries--Hygienic aspects)

BARANOV, V.

Development of state insurance under present-day conditions.
Fin. SSSR 23 no.10:34-41 O '62. (MIRA 15:10)
(Insurance, Agricultural)

BARANOV, V.; PEREVERZEV, S.

Pumping Machinery

Impeller pump assembly VP-24 Khlopkovodstvo No. 1, 1952.

9. Monthly List of Russian Accessions. Library of Congress, September 1952 ///, Uncl.

BARANOV, V.

"Review of N.A. Shereshevskiy's Book 'Clinical Endocrinology'," Klin. Med., 26, No 6, 1948

BARANOV, V., mayor, propagandist politotdela soyedineniya.

A lecture group attached to a party bureau. Komm.Vooruzh.Sil 1 no.3:60-63 N '60. (MIRA 14:8)
(Russia--Army--Political activity)

[illegible], A.

Insurance, [illegible]-Livestock

[illegible] [illegible] livestock in [illegible]. [illegible] 13, no. [illegible], 1952.

[illegible]

BARANOV, V.

Chinese railroad lines. p. 44.
(TRANSPORTNO DELO Vol. 7, no. 3, 1955, Sofiya)

SO: MONTHLY List of East European Accessions, (EEAL). LC, Vol. 4, No. 11, Nov. 1955, Uncl.

BARANOV, V., inzhener.

Technology of high tensions. Tekh.mol. 23 no.12:8 D '55.
(MLRA 9:2)
1.Nachal'nik laboratorii tekhniki vysokikh napryazheniy Moskovskogo energeticheskogo instituta imeni V.M.Moletova.
(Moscow--Electric engineering--Study and teaching)

BARANOV, V.; USATOV, N. (Kiyev)

Antenna break caused a fire. Pozh.delo 4 no.11:15 N '58.
(MIRA 11:12)
(Radio--Antennas)

BARANOV, V.

Give more attention to the work with staff members in State Insurance Administration departments. Fin. SSSR 21 no.11:38-43 N '60.
(MIRA 13:11)

1. Nachal'nik otdela gosudarstvennogo strakhovaniya Ministerstva finansov SSSR.
(Insurance) (Employees, Training of)

BARANOV, V., arkhitektor

Consolidation of different enterprises of the construction industry. Na stroi.Ros. 3 no.6:2-4 Je '62. (MIRA 16:7)
(Industrial buildings) (Construction industry)

BARANOV, V., arkhitektor

Buildings for the construction industry without bridge cranes.
Na stroi. Ros. 4 no.6:16 Je '63. (MIRA 16:6)
(Industrial buildings--Design and construction)

BARANOV, V.A.; SMIRNOVA, A.P., red. izd-va; KASIMOV, D.Ya., tekhn. red.

[Forecasting the salt content of reservoir waters] Prognoz volevogo rezhima vodokhranilishch. Moskva, Gos. izd-vo lit-ry po stroit., arkhit. i stroit. materialam, 1962. 124 p. (MIRA 15:3)

(Donets Basin--Reservoirs)
(Water--Composition)

BARANOV, V.A., kand.tekhn.nauk

Determining conditions for the most efficient operation of irrigation pumps. Trudy SANIIRI 93:39-67 '58. (MIRA 14:5)
(Irrigation) (Pumping machinery)

BARANOV, V.A., inzh. (Voronezh)

Longitudinal forced vibrations of prismatic rods on an elastic inert half space. Issl. po teor. sooruzh. no.13:97-103 '64.
(MIRA 18:2)

BARANOV, V.A.

The use of hydrocyclones in ore dressing plants. Gor.zhur. no.12:3 of cover D '55. (MLRA 9:4)
(Separators (Machines))

BARANOV, V.A., kandidat tekhnicheskikh nauk; DEYCH, M.Ye., kandidat tekhnicheskikh nauk.

Experimental apparatus for determination of grate characteristics by the method of reactive power weighting. Teploenergetika 4 no.3: 28-31 Mr '57. (MLRA 10:3)

1. Moskovskiy energeticheskiy institut.
(Boilers--Testing)

DEYCH, M.Ye.; BARANOV, V.A.; ROZANOV, K.A.

Investigating cascades of profiles of turbines by weighing the reactive power. Nauch.dokl.vys.shkoly; energ. no.3:139-148 '58. (MIRA 12:1)

(Turbines)

BARANOV, V.A., kand.tekhn.nauk

Piston inertia water lift pump with hydraulic drive. Trudy SANIIRI no.106:15-34 '60. (MIRA 14:5)
(Reciprocating pumps)

BARANOV, V.A.; OMELIN, N.N.

Undercutting the runners of propeller pumps. Trudy SANIIRI no.106:35-41 '60. (MIRA 14:5)
(Rotary pumps)

BARANOV, V.A.

Determining the location of a possible breakdown of the flow in pipings of a pumping station. Izv.AN Uz.SSR. Ser.tekh.nauk no.4:52-64 '61. (MIRA 15:1)

1. Institut vodnykh problem i gidrotekhniki AN UzSSR.
(Pumping stations)
(Pipe—Hydrodynamics)

BARANOV, V.A.; ZIBOL'D, F.F.; POPOV, L.N.

Results of hydrological and hydrochemical research in reservoirs of the Donets Basin. Gidrokhim. mat. 32:122-127 '61. (MIRA 14:6)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut vodosnabzheniya kanalizatsii, gidrotekhnicheskikh sooruzheniy i inzhenernoy gidrogeologii "VODGEO" i Akademiya stroitel'stva i arkhitektury SSSR, laboratoriya gidrologicheskikh issledovaniy, Moskva.
(Donets Basin--Reservoirs)
(Water--Composition)

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E194/E455

26.2122

AUTHORS: Deych, M.Ye., Doctor of Technical Sciences, Professor,
Baranov, V.A., Candidate of Technical Sciences,
Frolov, V.V., Candidate of Technical Sciences,
Filippov, G.A., Engineer

TITLE: The influence of blade height on certain characteristics of single-row turbine stages

PERIODICAL: Energomashinostroyeniye, no.1, 1962, 6-9

TEXT: This article describes work done in the Kafedra parovykh i gazovykh turbin (Steam- and Gas-Turbine Department) of the MEI. The notation used in the article is shown in Fig.1. The stages tested had a mean diameter d_{cp} = 400 mm and the value of the height b_1 ranged from 48 to 10 mm. The clearances had the following values: δ_1, 1.2 to 1.5 mm; δ_2, 3 mm; δ_3, 0.6 to 0.8 mm; δ_4, 1.5 mm. There were no equalizing holes in the disc. The stages were built up by combining a number of different types of runner and nozzle blades so that the effective blade length and other characteristics could be altered. Curves are plotted of stage efficiency and reaction as functions of the velocity ratio of

Card 1/2

u/c_o for stages having different blade lengths. The influence of blade to nozzle area F_2/F_1 on efficiency and the influence of the enclosed axial clearance δ_2 and of the Reynolds number with different blade lengths are also plotted. It is concluded that meridional profiling of nozzle blading in stages with a height of 10 to 25 mm gives an appreciable increase in stage efficiency, of the order of 2 to 3%. In stages with this kind of profiling, there is almost no difference between the reaction at the blade tip and that at the blade root. When the blades are short, the efficiency falls off more rapidly than is the case with long blades if the velocity ratio is not of the optimum value, within the range of u/c_o = 0.4 to 0.58. Other things being equal, the mean stage reaction depends very much on the height of the blades, and it increases as the blades become shorter. When the blades are short the area ratio F_2/F_1 has less influence on the stage efficiency than when they are long. The magnitude of the optimum relative enclosed axial clearance δ_2 diminishes as the blades are shortened. The Reynolds number was found to have an influence on the optimum value of this clearance for stages with short blades.

BARANOV, V. A.

Using air pressure tanks to adjust pressures in pressure pipelines of irrigation systems. Vop. gidr. no.5:60-79 '62.
(MIRA 15:10)

(Golodnaya Steppe—Pipelines—Equipment and supplies)
(Irrigation)

BARANOV, V. A.; PEREVERZEV, S. K.

Standardizing the operation of irrigation pumps having small capacity. Vop. gidr. no.5:80-95 '62. (MIRA 15:10)

(Uzbekistan—Pumping machinery)

BARANOV, V. A.

Some problems in planning systems of zonal irrigation using machines. Vop. gidr. no.5:5-28 '62. (MIRA 15:10)

(Irrigation)

BARANOV, V. A.

Selection of the number units for irrigation pumping stations. Vop. gidr. no.5:29-54 '62. (MIRA 15:10)

(Pumping stations)

BARANOV, V. A.; TELYATNIKOV, B. P.

The new ShU-PGM-2 piler for sand, gravel and crushed stone.
Biul. tekh. inform. Inst. "Proektgidromekh." no.1:33-38 '62.
(MIRA 16:1)

(Sand and gravel plants--Equipment and supplies)
(Crushed stone industry--Equipment and supplies)

BARANOV, V. A.

Initial selection of pumping units for irrigation stations.
Vop. gidr. no.5:46-59 '62. (MIRA 15:10)

(Pumping machinery)

BARANOV, V.A.; SUBBOTIN, N.Ye.

Technology of repairing plunger bushings of fuel pumps. Trakt. i sel'khozmash. 33 no.5:43-44 My '63. (MIRA 16:10)

1. Voronezhskiy sel'skokhozyaystvennyy institut.

DEYCH, M.Ye., doktor tekhn. nauk, prof.; FILIPPOV, G.A., kand. tekhn. nauk; BARANOV, V.A., kand. tekhn. nauk; PRYAKHIN, V.V., inzh.; KUSTOV, O.P., inzh.

Effect of humidity on the efficiency of a bandaged and nonbandaged turbine stage. Energomashinostroenie 10 no.8:21-26 Ag '64. (MIRA 17:11)

BARANOV, V.A.

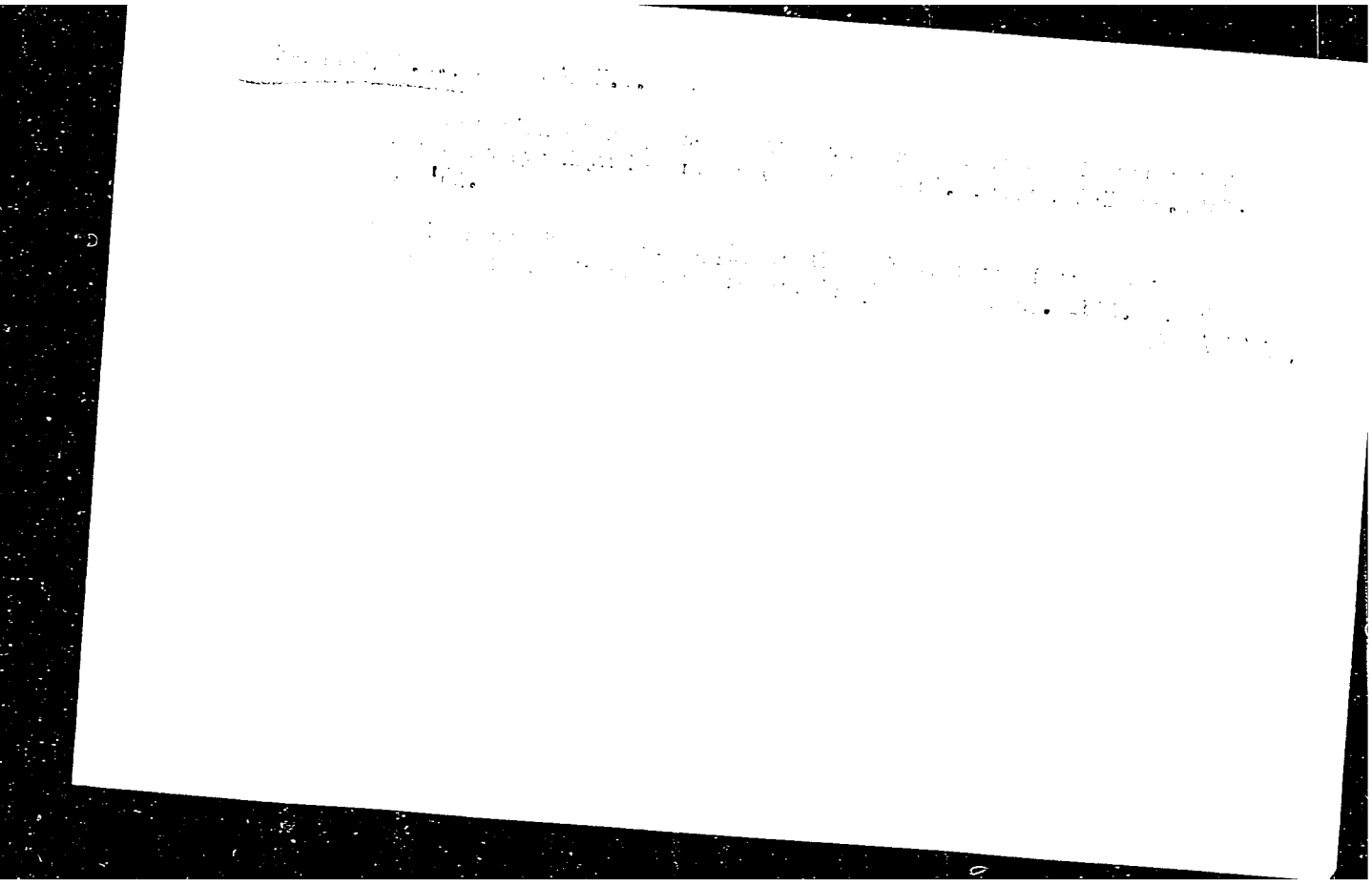
Concerning the efficiency of pumping stations for machine irrigation.
Vop. gidrotekh. no.15:5-17 '63. (MIRA 18.2)

BARANOV, V.A.; OMELIN, N.N.

Calculating the simultaneous operation of the pumping units in drilling wells feeding the same pipeline. Vop. gidrotekh. no.15: 18-31 '63. (MIRA 18:2)

DEYCH, M. Ye., doktor tekhn. nauk, prof.; SHEYNKMAN, A.G., kand. tekhn. nauk; FILIPPOV, G.A., kand. tekhn. nauk; BARANOV, V.A., kand. tekhn. nauk; KIRSANOVA, A.A., inzh.; MIKHAYLOV, B.A., inzh.

Experimental study of a model take-off regulatory stage with a rotary diaphragm. Energomashinostroenie. 11 no.2:14-17 F'65.



APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000103510014-6"

BARANOV, V.B. (Moskva)

Effect of a magnetic field on the temperature distribution in a Couette flow in anisotropic magnetohydrodynamics. PMTF no.6: 8-12 N-D '62. (MIRA 16:6)
(Heat--Conduction) (Magnetohydrodynamics)

BARANOV, V.B. (Moscow)

"On the applicability of various equations to the investigation of fully ionized gas"

report presented at the 2nd All-Union Congress on Theoretical and Applied Mechanics, Moscow, 29 January - 5 February 1964

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E031/E135

AUTHOR: Baranov, V.B. (Moscow)

TITLE: On the Acceleration of a Conducting Gas by a Moving Magnetic Field

PERIODICAL: Izvestiya Akademii nauk SSSR, Otdeleniye tekhnicheskikh nauk, Mekhanika i mashinostroyeniye, 1960, No 4, pp 14-18

TEXT: The speed of propagation of the magnetic field can be increased by increasing the frequency of the electric current fed into the inductor. The author investigated the possibility of accelerating weakly conducting gases of speeds of the order of 10 to 12 km/sec by utilising such a moving magnetic field. Using the equations of magneto-hydrodynamics the problem is considered in a one-dimensional form. Expressions are obtained for the velocity, density, pressure and temperature distributions along the length of the channel in three cases: acceleration in a channel of constant cross-section, isometric acceleration, and acceleration in a slowly expanding channel. The case is considered when the magnetic field induced in the conducting gas can be neglected. Viscosity is ignored. The strength of the external electrical field is assumed to be zero. All quantities are considered as depending only on the

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On the Acceleration of a Conducting Gas by a Moving Magnetic Field

coordinate x along the channel. Consider the one-dimensional motion of a weakly conducting gas to which there is applied a ponderomotive force arising due to the relative motion of a magnetic field and the fluid. The equations of continuity, motion, energy and state apply. The system of equations can be integrated in the case of constant channel cross-section and constant temperature. If the cross-section is a given function of x the equations can be integrated numerically. In the first of these cases, non-dimensional variables are introduced and the pressure and temperature eliminated. The distance x is then obtained as a function of the velocity, the result being stated. The effects of different Mach numbers are briefly indicated. A similar system of non-dimensional variables is introduced in the second case. An expression is first obtained for the cross-section, from which that for the density can easily be deduced. Finally, an expression for the variation of the velocity along the channel is derived. This is discussed and it is concluded that isometric acceleration in a shaped channel is more effective than in a channel of constant cross-section.

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On the Acceleration of a Conducting Gas by a Moving Magnetic Field

In the third case a non-dimensional temperature is added to the variables of the previous case. Two non-linear differential equations are deduced, one for the velocity and the other for the temperature. The special case where the cross-section x varies as $1 + \beta x$ (where β is a constant) is considered. A general conclusion is that the least useful case is of acceleration in a channel of constant cross-section, whereas the best is achieved by shaping the channel and the velocity of the magnetic field. The combination of an electromagnetic acceleration with acceleration of the gas by means of suitable geometry is conceivable. For instance, it would be possible to accelerate the gas by a moving magnetic field inside a channel which expands according to a given law until a certain speed is reached; this is accompanied by an increase in the temperature. Following that, the acceleration can be continued by simple expansion by means of a geometrical configuration (for supersonic speeds) until the temperature drops to its initial value and then to accelerate again by means of a moving electric field. These accelerations can be alternated until the desired gas speed is obtained.

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On the Acceleration of a Conducting Gas by a Moving Magnetic Field

There are 6 figures and 4 references: 1 English and 3 Soviet.

SUBMITTED: April 2, 1960

Card 4/4

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S/179/61/000/003/004/016
E031/E435

AUTHOR: [redacted], V.B. (Moscow)

TITLE: The steady flow of an ionized gas in a plane channel with anisotropic conductivity

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Otdeleniye tekhnicheskikh nauk. Mekhanika i mashinostroyeniye, 1961, No.3, pp.22-25

TEXT: If the gas is such that $\omega\tau_e$ is of the order of unity and $\omega\tau_i$ negligible compared to unity, where ω is the Larmor frequency of an electron or an ion and τ is the time of the mean free path of an electron or an ion respectively, then the tensor of viscous stresses does not differ from that of ordinary hydrodynamics. The fluid is assumed incompressible; the viscosity and conductivity of the gas in the absence of a magnetic field are constant. Then from the generalized form of Ohm's law and Maxwell's equations we obtain the equation for the induction of the magnetic field. This equation and the equation of motion may be simplified by considering steady flow between two infinite parallel planes under the action of a constant pressure gradient

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E051/E435

The Stability of the Hall ...

along the x axis and assuming that there is a magnetic field perpendicular to the plates (along the y-axis). All parameters are assumed to depend only on z. The non-zero velocity along the x-axis is determined by the currents along the x-axis. The solution can be shown to coincide with that of Hartmann in magnetic hydrodynamics in the limit. As the parameter $\sigma\mu_e H_0/H$ ($H_z = H_x$ = constant) increases, the velocity along the x-axis increases at first but later begins to fall as the currents along the x-axis diminish. There are 3 figures and 5 references: 4 Soviet and 1 non-Soviet. The reference to an English-language publication reads as follows: Chapman S., Cowling T.G. The mathematical theory of non-uniform gases. Cambridge, 1939.

SUBMITTED: February 24, 1961

Card 3/3

1327
24.2120 2207

26734
S/040/61/025/003/011/026
D208/D304

AUTHORS: Baranov, V.B., and Lyubimov, G.A. (Moscow)

TITLE: Generalized Ohm's law in a completely ionized gas

PERIODICAL: Akademiya nauk SSR. Otdeleniye tekhnicheskikh nauk. Prikladnaya matematika i mekhanika, v. 25, no. 3, 1961, 468 - 472

TEXT: In deriving equations of motion of fully ionized gas and relations connecting current density with other parameters, the concept of a binary (electron-ion) mixture is used. Here the problem considered is that of the influence of viscosity of the components on the equation for the current density of generalized Ohm's law and the dimensionless criteria are given which influence the final form of the generalized Ohm's law for a completely ionized gas. The gas is assumed to consist of the electrons and singly charged ions and their number per unit volume to be n. The equations of motion for each component are

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$$m_e n \frac{d_e \mathbf{v}_e}{dt} = -\nabla p_e - \operatorname{div} \pi_e - en\left(\mathbf{E} + \frac{1}{c}[\mathbf{v}_e \times \mathbf{H}]\right) + \mathbf{R}_e \qquad (1)$$

$$m_i n \frac{d_i \mathbf{v}_i}{dt} = -\nabla p_i - \operatorname{div} \pi_i + en\left(\mathbf{E} + \frac{1}{c}[\mathbf{v}_i \times \mathbf{H}]\right) + \mathbf{R}_i \qquad (2)$$

$$\frac{d_e}{dt} = \frac{\partial}{\partial t} + \mathbf{v}_e \nabla, \quad \frac{d_i}{dt} = \frac{\partial}{\partial t} + \mathbf{v}_i \nabla$$

where m_e, m_i = mass of the electron and iron respectively ($m_e \ll m_i$) v_e, v_i = macroscopic velocities; p_e, p_i = partial pressures; π_e, π_i = tensors of viscous stresses for the electron and ion gas respectively, e = electron charge, E and H = intensities of electric and magnetic fields, and $R_e = -R_i$. If also $m_e v_{ex}^2 \ll m_i v_{ix}^2$, $p_e = p_i = 1/2\ p$, then

$$en\left(-\frac{d_e \mathbf{v}_e}{dt} + \frac{d_i \mathbf{v}_i}{dt}\right) = \frac{e}{m_e}\nabla p_e + \operatorname{div}\left(\frac{e}{m_e}\pi_e - \frac{e}{m_i}\pi_i\right) + \frac{e^2 n}{m_e}\left(\mathbf{E} + \frac{1}{c}\mathbf{v} \times \mathbf{H}\right) = -\frac{e}{m_i c}\mathbf{j} \times \mathbf{H} - \frac{e^2 n}{m_e}\frac{1}{\sigma}\mathbf{j} \quad (m_e \ll m_i) \qquad (3)$$

$$\sigma = \frac{ne^2\tau_e}{m_e}, \qquad j = -en(v_e - v_i) \tag{3}$$

where σ = conductivity of the gas in the absence of magnetic field. j = current density, τ_e - time between two electron-ion collisions. If in addition $m_i v_i \gg m_e v_e$ and $v \sim v_i$, $v_e \sim v - \frac{1}{en} j$, then together with the continuing $\frac{dn}{dt} + n \operatorname{div} v = 0$

$$\frac{dj}{dt} + j \operatorname{div} v + (j\nabla)v - (j\nabla)\frac{j}{en} = \frac{e^2 n}{m_e}\frac{1}{\sigma} j + \frac{e^2 n}{m_e}\left(E + \frac{1}{c} v \times H\right) -$$

$$- \frac{e}{m_e c} j \times H + \frac{e}{m_e}\nabla p_e + \operatorname{div}\left(\frac{e}{m_e}\mathfrak{T}_e - \frac{e}{m_i}\mathfrak{T}_i\right) \tag{4}$$

is obtained. It is assumed that characteristic time $t \gg \max\{\tau_e,$

Generalized Ohm's law in a ...

τ_i. When the electromagnetic field influences the motion and viscous forces are present,

$$\rho V^2 \sim \frac{1}{c} jHL, \text{ or } j \sim \frac{nm_i V^2 c}{HL} \quad (\rho = n(m_e+m_i) = nm_i) \qquad (5)$$

and

$$\eta \frac{V}{L} \sim V^2 \text{ or } \eta \sim nm_i VL \quad (\eta = 0.96nT\tau_i) \qquad (6)$$

where V, L = characteristic velocity and length associated with the problem. T = temperature. From Eqs. (5), (6) the following expressions are obtained for the terms of (4).

$$A_1 = j\,\mathrm{div}\,v \sim (j\nabla)v \sim \frac{enm_i V^2 cV}{cHL^2} = enV\frac{\Omega^2}{\omega_i}$$

$$A_2 = (j\nabla)\frac{j}{en} \sim \frac{nm_i V^2 enm_i V^2 c}{HLenLHL^2} = enV\frac{\Omega^3}{\omega_i^2}$$

Card 4/6

$$A_3 = \frac{e^2 n}{m_e}\frac{1}{3}\mathbf{j} = \frac{\mathbf{j}}{\tau_e} \sim \frac{nm_i V^2 c}{HL\tau_e} = enV\frac{\Omega}{\omega_i \tau_e}$$

$$A_4 = \frac{e^2 n}{m_e}\mathbf{E} \gtrsim \frac{e^2 n}{m_e c}[\mathbf{v}\times\mathbf{H}] \sim enV\omega_e$$

$$A_5 = \frac{e}{m_e}\nabla p_e \lesssim \frac{e}{m_e c}\mathbf{j}\times\mathbf{H} \sim \frac{e}{m_e c}\frac{nm_i V^2 c}{HL} \quad H = enV\frac{m_i}{m_e}\Omega$$

$$A_6 = \frac{\partial}{\partial x}\left[0.96\, enT\frac{\tau_e}{m_e}\frac{\partial w}{\partial z}\right] \sim 0.96\, nT\tau_i \frac{e}{m_e}\frac{\tau_e}{\tau_i}\frac{V}{L^2} =$$

$$= \eta\frac{e}{m_e}\frac{V}{L^2}\sqrt{\frac{m_e}{m_i}} \sim enV\sqrt{\frac{m_i}{m_e}}\Omega$$

$$A_7 = \frac{\partial}{\partial x}\left[0.96\, enT\frac{\tau_e}{m_e}\frac{\partial}{\partial z}\frac{H^2}{en}\right] \sim 0.96\, nT\tau_i\frac{\tau_e}{\tau_i}\frac{nm_i eV^2 c}{HLen^2 e^2 L^2} =$$

$$= \eta\frac{\tau_e}{\tau_i}\frac{m_i}{m_e}\frac{cV^2 c}{eHL^2} \sim enV\sqrt{\frac{m_i}{m_e}}\frac{\Omega^2}{\omega_i}$$

$$\left(\Omega = \frac{V}{L} = \frac{1}{T},\ \frac{\Omega}{\omega_i} \sim \frac{v_e - v_i}{V}\right)$$

Card 5/6

Generalized Ohm's law in a ...

where Ω = characteristic frequency and all the terms of Eq. (4) are expressed in dimensionless parameters Ω/ω_i and $\omega_e\tau_e$. The final form of Ohm's law will depend on those parameters, and the following cases are considered: 1) $\Omega/\omega_i \ll 1$, $\omega_e\tau_e \lesssim 1$; 2) $\Omega/\omega_i \ll 1$, $\omega_e\tau_e \gg 1$; 3) $\Omega/\omega_i \ll 1$, $\omega_e\tau_e \gg 1$; 4) $\Omega/\omega_i \simeq 1$, $\omega_e\tau_e \ll 1$; 5) $\Omega/\omega_i \simeq 1$; $\omega_e\tau_e \simeq 1$; 6) $\Omega/\omega_i \simeq 1$, $\omega_e\tau_e \gg 1$; 7) $\Omega/\omega_i \gg 1$, $\omega_e\tau_e \ll 1$; 8) $\Omega/\omega_i \gg 1$, $\omega_e\tau_e \simeq 1$; 9) $\Omega/\omega_i \gg 1$, $\omega_e\tau_e \gg 1$. The result shows that in deriving Ohm's law for a binary model of a completely ionized gas, the viscosity terms can be neglected. There are 3 Soviet-bloc references.

SUBMITTED: March 4, 1961

Card 6/6

S/040/62/026/006/007/015
D234/D308

AUTHOR: Baranov, V.B.

TITLE: On the deduction of equations of anisotropic magnetohydrodynamics

PERIODICAL: Prikladnaya matematika i mekhanika, v. 26, no. 6, 1962, 1092 - 1093

TEXT: The author refers to A.I. Gubanov and Yu.I. Lun'kin (ZhTF, v. 30, no. 9, 1960) where several errors are found, and to a paper of S.I. Braginskiy, correcting some misprints. Using the same notations as in the above papers, expressions for the components of viscous stress tensor are given, assuming that the gas is completely ionized. With an accuracy up to the first powers of current density

$$q_z = -\lambda\left(\frac{\partial T}{\partial z} + \iota' j_z\right), \qquad \begin{aligned} q_x &= -\lambda\left(\varkappa\frac{\partial T}{\partial x} - \omega_1\tau_1\varkappa'\frac{\partial T}{\partial y} + \iota' j_x - \omega_1\tau_{11}\varkappa' j_y\right) \\ q_y &= -\lambda\left(\varkappa\frac{\partial T}{\partial y} + \omega_1\tau_1\varkappa'\frac{\partial T}{\partial x} + \iota' j_y + \omega_1\tau_{11}\varkappa' j_x\right) \end{aligned} \qquad (2)$$

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and $1' = (1.58\ \omega_1^4\ \tau_1^4 + 26.6\ \omega_1^2\ \tau_1^2 + 7.66)TH\ \Lambda_1/\omega_1\tau_1 pc$; the latter differs from the dependence found by Gubanov and Lun'kin. The results are substituted into the energy equation.

SUBMITTED: September 13, 1962

Card 2/2

BARANOV, V.B. (Moskva)

Temperature boundary layer on a flat plate in anisotropic magnetohydrodynamics. Izv.AN SSSR.Otd.tekh.nauk.Mekh.i mashinostr. no.6;3-5 N-D '62. (MIRA 15:12)

(Magnetohydrodynamics)

h5282

S/207/62/000/006/002/ 025
E032/E114

AUTHOR: Baranov, V.B. (Moscow)

TITLE: The effect of a magnetic field on the temperature distribution in the case of Couette flow in anisotropic magnetohydrodynamics

PERIODICAL: Zhurnal prikladnoy mekhaniki i tekhnicheskoy fiziki, no.6, 1962, 8-12

TEXT: This paper is concerned with the flow of a fully ionised gas between two parallel plates which arises as a result of the motion of the upper plate with a constant velocity U in the direction of the x-axis. The lower plate is at rest in the yx plane while the upper plate lies in the z = h plane. The externally applied magnetic field $H_z = H_0$ is constant and is parallel to the z-axis. All the parameters are assumed to be functions of z only. The gas is assumed to be incompressible; the electrical conductivity and the viscosity are assumed to be constant; and the ion cyclotron frequency is assumed to be small compared with the ion collision frequency. The velocity and the induced magnetic field are determined from the equations reported

in an earlier paper (Izv. AN SSSR, OTN, Mekhanika i mashinostroyeniye, no.3, 1961) by putting $\partial p/\partial x = 0$. In the second part of the paper the field is taken to be parallel to the plates and perpendicular to the motion of the upper plate. In both cases it is assumed that the magnetic Reynolds number is much smaller than unity. A solution of the second problem is obtained by setting $\omega_2 \tau_2 = 0$, where ω_2 is the ion cyclotron frequency and τ_2 is the mean free time in the solutions reported by A.I. Gubanov and Yu.P. Lun'kin (ZhTF, v.30, no.9, 1960). The results of the calculations are shown in Figs 1, 2 and 3, where $y^* = y/h$, $T^* = T/T_0$, T_0 is the characteristic temperature, M is the Hartmann number, and K is a parameter characterising the ratio of terms with Joule dissipation to terms associated with Thomson and Ettingheusen effects. These graphs were obtained by setting

$$PU^2/c_p T_0 = T_\infty/T_0 = 1$$

where P - the Prandtl number, c_p is the specific heat at constant pressure, and T_∞ is the temperature of the upper plate. There are 3 figures.

Card 2/3 SUBMITTED: September 13, 1962

The effect of a magnetic field ... S/207/62/000/006/002/025
E032/E114

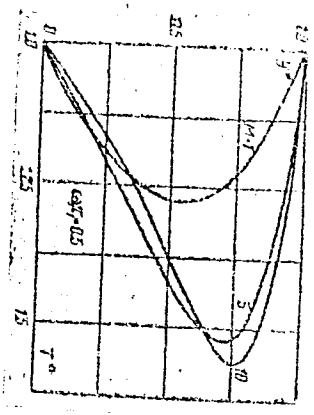

Fig.1

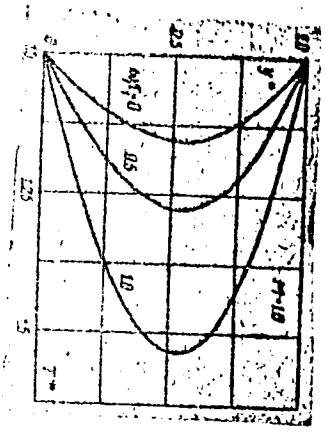

Fig.2

Fig.3

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BARANOV, V.B. (Moskva)

On the derivation of equations of anisotropic magnetohydrodynamics. Prikl. mat. i mekh. 26 no.6:1092-1093 N-D '62. (MIRA 16:1)
(Magnetohydrodynamics) (Differential equations)

ACCESSION NR: AT4042280 S/0000/63/003/000/0035/0047

AUTHOR: Baranov, V. B.

TITLE: Hydromagnetic equations at arbitrary Omega Tau and some heat effects related to the anisotropy of transfer characteristics

SOURCE: Soveshchaniye po teoreticheskoy i prikladnoy magnitnoy gidrodinamike. 3d, Riga, 1962. Voprosy* magnitnoy gidrodinamiki (Problems in magnetic hydrodynamics); doklady* soveshchaniya, v. 3. Riga, Izd-vo AN LatSSR, 1963, 35-47

TOPIC TAGS: hydromagnetics, ionized gas flow, transverse magnetic field, viscous stress tensor, heat flow vector, flat semifinite plate, plate temperature boundary layer, Couette flow temperature distribution, Hartman number, Ettingshausen effect, heat transfer characteristic

ABSTRACT: Corrected expressions are written for the components of the heat flow vector and viscous stress tensor in the mono-fluid approximation for a fully ionized gas consisting solely of electrons and singly charged ions. Assuming $\omega_2 \tau_2 \ll 1$ and $\omega_1 \tau_1$ congruent with unity (i.e. viscous stress tensor independent of the magnetic field and heat flow vector governed by electrons only), the author analyzes the temperature distribution in a Couette flow acted on by a magnetic field perpendicular to the flow of gas, and considers tempera-

ACCESSION NR: AT4042280

ture boundary layers on a flat semifinite plate. Results are plotted graphically for $\omega\tau = 0$, 0.5 or 1.0 and M = 1, 5 or 10, and it is concluded that an increase in Hartman's number leads to a reduction in the temperature gradient around a static plate, and that the velocity profile is almost linear at small M values, while an increase in $\omega_1\tau_1$ results in a rise in temperature for all considered instances. Ettingshausen's effect reduced the temperature gradient near a plate, thus reducing heat flows in the direction of the plate walls. Orig. art. has: 6 graphs and 19 equations.

ASSOCIATION: None

SUBMITTED: 04Dec63 ENCL: 00

SUB CODE: ME NO REF SOV: 008 OTHER: 003

2/2
Card

ACCESSION NR: AP3003245 S/0040/63/027/003/0509/0522

AUTHOR: Baranov, V. B. (Moscow); Lyubimov, G. A. (Moscow); Hu Yu-yin (Moscow)

TITLE: Calculation of the boundary layer on a dielectric plate in a flow of an incompressible, anisotropically conducting fluid in the presence of a homogeneous, transverse magnetic field

SOURCE: Prikladnaya matematika i mekhanika, v. 27, no. 3, 1963, 509-522

TOPIC TAGS: boundary layer, flow over flat plate, electrically conducting fluid flow, transverse magnetic field, flow in magnetic field, magneto-aerodynamic effect

ABSTRACT: The results of the authors' previous works (Baranov, V. B. Prikl. mat. i mekh., v. 26, no. 6, 1962; Lyubimov, G. A. Prikl. mat. i mekh., v. 26, nos. 5 and 6, 1962) are applied to the solution of the boundary layer problem in weakly and fully ionized media. Under certain assumptions

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the problem is reduced to the solution of a system of differential equations:

$$u\frac{\partial u}{\partial x} + w\frac{\partial u}{\partial z} - \frac{1}{R}\frac{\partial^2 u}{\partial z^2} = -\frac{\partial p}{\partial x} + mL(-u+\omega\tau v+\omega\tau E_x^{\circ}) + \frac{\omega^2\tau^2}{1+\omega^2\tau^2}\frac{\partial p_e}{\partial x}$$

$$u\frac{\partial v}{\partial x} + w\frac{\partial v}{\partial z} - \frac{1}{R}\frac{\partial^2 v}{\partial z^2} = -mL(\omega\tau u+v+E_x^{\circ}) - \frac{\omega\tau}{1+\omega^2\tau^2}\frac{\partial p_e}{\partial x}$$

$$\frac{\partial u}{\partial x} + \frac{\partial w}{\partial z} = 0.$$

Four different regimes of external flow are considered, and solutions are sought by linearization with respect to a certain parameter. The cyclotron frequency of ion rotation is assumed to be small in comparison to the ion collision frequency. The Thompson, Ettinghausen, and Leduc-Riggi effects are taken into account in the derivation of energy equations. Studies of the

ACCESSION NR: AP3003245

thermal boundary layer are presented, and graphs of the velocity and temperature profiles are given for various values of different parameters (ω, τ, m^*x, and Prandtl numbers from 0.1 to 0.01). Numerical calculations were made on the "Strela" computer at the MGU computing center. "The authors consider it their duty to thank M. N. Kogan and A. G. Kulikovskiy for their discussion of the results and useful critical comments and staff members G. S. Roslyakov and Ye. N. Starova of the MGU computing center for help in calculation." Orig. art. has: 12 figures and 49 formulas.

ASSOCIATION: none

SUBMITTED: 21Jan63 DATE ACQ: 23Jul63 ENCL: 00

SUB CODE: 00 NO REF SOV: 006 OTHER: 001

Card 3/3

ACCESSION NR: AP4041192 S/0207/64/000/003/0052/0059

AUTHOR: Baranov, V. B. (Moscow)

TITLE: Regions of applicability of various equations for studying completely ionized gas

SOURCE: Zhurnal prikladnoy mekhaniki i tekhnicheskoy fiziki, no. 3, 1964, 52-59

TOPIC TAGS: ionized gas, kinetic theory, coulomb interaction, binary collision, Boltzmann equation, kinetic equation, Landau integral, plasma, Liouville equation

ABSTRACT: The author bases his work on a method proposed by Yu. L. Klimontovich (Statisticheskaya teoriya neravnovesny*kh protsessov v plazme. Doktorskaya dissertatsiya, Moscow, 1962 g) to describe the restrictions which must be satisfied by the parameters of a plasma so that one can pass from the Liouville equation for a random function of the number of particles $F_a(q,p,t)$ to the kinetic Boltzmann equation with integral collisions in the form of Landau by means of averaging. On the basis of the obtained system of inequalities in the density-temperature plane, a diagram is constructed of the region which gives a clear representation of the possibility of using certain equations for describing processes in a plasma, given the parameters of the system (e.g., potential of ionized gas, density, temperature,

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ACCESSION NR: AP4041192

magnetic field). From the obtained system the author draws the conclusion that for describing processes in a plasma with suitable parameters, a closed system of equations can be used. These consist of the kinetic Boltzmann equation with integral collisions in the form of Landau and the Maxwell equations for an electromagnetic field, where the mean statistical value of the number of particles in a unit of the phase space corresponds to the first distribution function usually involved in the Boltzmann equation. "In conclusion the author thanks Yu. L. Klimontovich, A. G. Kulikovskiy, and N. N. Shirokov for their valuable advice and discussions." Orig. art. has: 1 figure and 24 formulae.

ASSOCIATION: none

SUBMITTED: 20Feb64 ENCL: 00

SUB CODE: ME NO REF SOV: 015 OTHER: 002

Card 2/2

ACCESSION NR: AP4018433 S/0179/64/000/001/0141/0142

AUTHOR: Baranov, V. B.(Moscow); Kulikovskiy, A. G.(Moscow); Lyubimov, G. A. (Moscow)

TITLE: The boundary layer on a flat plate in anisotropic magnetohydrodynamics

SOURCE: AN SSSR. Izv. Otd. tekh. nauk. Mekhanika i mashinostroyeniye, no. 1, 1964, 141-142

TOPIC TAGS: flat plate, boundary layer, boundary layer condition, thermal boundary layer, Ettingshausen effect, aerodynamics

ABSTRACT: Expanding the subject of a previous report (Baranov, V. B., Izv, AN SSSR, OTN, Mekhanika i mashinostroyeniye, 1962, No. 6), the authors consider disturbances to an external flow caused by a boundary layer to show that temperature at the latter's boundary can be considered fixed despite the presence of the Ettingshausen effect. Further, it is shown that the inequality $M \lesssim R$ (where M is Hartman's number, R is Reynold's number, as related to the characteristic length l along the plate) can be diminished and the form $M \lesssim R$ can be used for the existence of the Blasius velocity profile. The thermal boundary layer is

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ACCESSION NR: AP4018433

calculated with consideration of Ettingshausen's effect (see Fig. 1 in the Enclosure). "In conclusion, the authors express gratitude to M. N. Kogan for calling their attention to the problem and participating in evaluation of possible solutions". Orig. art. has: 1 figure and 10 formulas.

ASSOCIATION: none

SUBMITTED: 24Sep63 ATD PRESS: 3046 ENCL: 01

SUB CODE: ME NO REF SOV: 003 OTHER: 000

Card 2/3

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APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000103510014-6"

ACCESSION NR: AP4018433 ENCLOSURE: 01

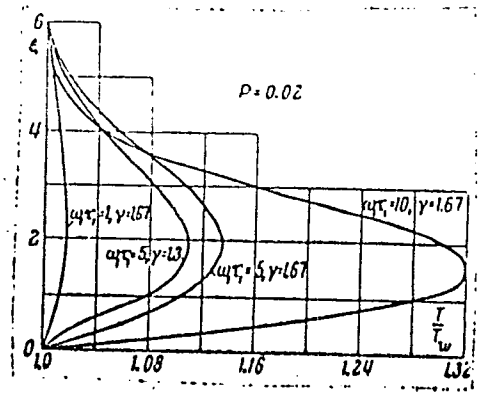

Fig. 1. Results of calculations

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Card

BARANOV, V.D.; YAKOVLEV, G.F.

Structure of complex metal deposits in the Zyryanovsk region (Rudnyy Altai) and its role in the distribution of mineralization. Izv.vys.ucheb.zav.;geol.i razv. 4 no.10:78-91 O '61. (MIRA 14:12)

1. Moskovskiy gosudarstvennyy universitet imeni M.V. Lomonosova.
(Zyryanovsk region--Ore deposits)

BARANOV, V.D.

Some structural characteristics of complex metal deposits in the Zyryanovsk region in the Altais. Geol. rud. mestorozh. no.5:34-54 S-O '60. (MIRA 13:10)

1. Institut tsvetnykh metallov im. M.I.Kalinina, Moskva.
(East Kazakhstan Province--Geology, Economic)

ACCESSION NR: AT4028294 S/2677/63/000/010/0230/0247

AUTHOR: Baranov, V. D.

TITLE: Initial zonality of mineralization and the distribution of rare elements in polymetal deposits of the Zy*ryansk mining region (Rudny*y Altai)

SOURCE: AN SSSR. Institut mineralogii, geokhimii i kristallokhimii redkikh elementov. Trudy*, No. 10, 1963. Redkiye elementy* v sul'fidny*kh mestorozhdeniyakh (rare earth elements in sulfide deposits) 230-247

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ABSTRACT: The author conducts a study of the initial distribution of rare elements according to specific zones in the Zy*ryansk mining region of Rudny*y Altai in the USSR. In his paper the author discusses the characteristics of the regions geological structure; the types of deposits according to the matter content of the ores and the regularity of their distribution in the region; the paragenetic association, sequence of their formation and their contents of rare elements. The results of this study are demonstrated in schematics and tables. In conclusion, the author

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